



A COMPARATIVE STUDY OF MENTAL TOUGHNESS BETWEEN INDIVIDUAL GAME AND TEAM GAME PLAYERS

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Abstract:

The purpose of this study was to compare the Mental Toughness between Individual Game and Team Game players. For the purpose of this study a total of 120 subjects (N=120) were chosen, Individual Game (n=60) and Team Game (n=60). The subjects were chosen using Quota sampling technique. Mental Toughness was measured using Dr. Alan Goldberg Questionnaire (1998) which consisted of thirty questions measuring five attributes namely Reboundability, Pressure Handling Ability, Concentration, Confidence and Motivation. Independent sample 't' test was used to compare the Mental Toughness between Individual Game and Team Game players. The results showed that there is a significant difference between Team Game Players and Individual Game players in terms of Reboundability, Pressure Handling and Overall Mental Toughness with Team Game players scoring higher in all three attributes. Whereas there was no significant difference in terms of Concentration, Confidence and Motivation but Team Game players scored higher in motivation and Individual Game players scored higher in concentration, whereas both groups had the same score for confidence. The higher Mental Toughness of Team Game Players compared to Individual Game players can be attributed to the team Game settings associated with team games wherein the players continuously receive support from other members of the team.

Keywords: mental toughness; reboundability; concentration; confidence; pressure handling ability; motivation; team game; individual game

1. Introduction

Sport is becoming an integral part of human life. From very simple beginning, it has now become highly organized activity of human society. The success and failure of an athlete is dependent on the combination of physical ability, conditioning, training, mental preparation and the ability to perform well under pressure. Competitive sports

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demand a high level physical ability, and at the same time, they require a sharp mental focus. In a world where many athletes are physically, technically and tactically increasingly similar, it is the mind which offers perhaps the greatest scope for a competitive advantage. In today's competitive world, it is very difficult to stay mentally tough and perform under tremendous pressure. More physical and mental energy is needed and for this, it is essential to be mentally tough hence, mental toughness is on high demand. Player are subject to performance evaluation by coaches, manager, fellow team-mates, spectators, press and media which occur before, during and post-performance. Player are expected to make a split second judgment and accurate movement or reaction to the opponent's move, often under immense pressure and tough situation, which can have far reaching effects with games at all levels. It is essential to be aware of the importance of sport psychology to assist athletes to perform sport skills better. There are also variety of factors in sport disciplines and competition in terms of the type of sports because athletes experience specific psychological behaviors. The demands in team sports are different from that of individual sports. The nature of sports makes an individual to behave in a certain manner. In group sports like football, basketball, handball and others the nature of these sports causes the athletes to commit many fouls during competition, as a result they experience negative emotion and show problematic behaviour. In contrast, in individual sports, athletes depend on to their individual abilities. In individual sports, performance criteria is one dimensional while in group sports performance depends on the teammates performance. In team sports, athletes are involved with teammates and spend a lot of time practicing with teammates and have more interaction with one another, in contrast in individual sports athletes spend a lot of time alone in practicing .In some of individual sports athlete have more time for mental skills practice and they do so in a quiet environment while distraction and loss of concentration are part of the team sports. In individual sports, the outcome is either winning or losing and there isn't tie, but in team sports all three results are possible.

1.1 Mental toughness

Mental toughness is one of the psychological dimensions that is considered important in performance, achievement and excellence across many domains of life Mental toughness is a term used throughout the sporting world it resides in common vocabulary of coaches, athletes, fan, and commentators across sporting context. With regards to sport, mental toughness is a term that coaches, athletes and sport psychology consultants use when discussing psychological factors that differentiate between successful and less successful athletes (Gucciardi et al., 2008; Tristan et al., 2010). Mental toughness is perhaps the single most valuable psychological characteristic in sports (Bull, Shambrook , James, and brooks, 2005; Jones, Hanton, and Connaughton, 2002).For instance a mentally tough person is described as the one who is a self-oriented person and who accepts criticism and failure without getting discouraged (Tuko and Richards,1971). Conversely, Clough, Earle, and Sewell (2002) reported that mentally

tough people have *“a high sense of self-belief and an unshakable faith that they control their own destiny, these individuals can remain relatively unaffected by competition and adversity”*. Many experts propose numerous attributes to clarify the nature of mental toughness, like not letting adverse situations affect performance (Gould et al., 1987), rebounding from failures (Woods et al., 1995), possessing superior mental skills (Bull et al., 1996), having the ability to cope with pressure (Goldberg, 1998) and being resilient (Crust, 2008). Loehr (1982) believes that mental toughness is the one factor that mediates the mind-body connection. He also describes some of the characteristics of a mentally tough athlete, including self-motivated, positive and realistic, emotional control, calmness, being highly energetic, determined, focused, self-confident, and responsible. Mental Toughness can be described as having the psychological edge that allows athletes to reach optimal performance states regardless of obstacles and/or adversity (Burton and Raedeke, 2008; Crust, 2008; Jones et al., 2002). Mental Toughness is also a concept that can be learned by athletes through systematic, long-term psycho educational training in mental skills and is important to promoting ideal performance in critical and/or adverse situations (Loehr, 1986; Parkes and Mallett, 2011). (Thewell et. al., 2005) defined mental toughness as having the natural or developed psychological edge that enables you to; always cope better than your opponents with the many demands (competition, training, lifestyle) that soccer places on the performer and specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure. (Jones et al. 2002) suggested that Mental attributes such as (a) an unshakeable self-belief, (b) ability to bounce back from set-backs, (c) insatiable desire and intrinsic motivation to be successful, (d) ability to remain focused in the face of distraction or unexpected events, (e) managing physical or emotional pain, (f) coping with anxiety, and (g) thriving during pressure-packed competitions are characteristics of Mentally tough athletes. Bull et al., 2005; Thelwell et al., 2005; Gucciardi et al., 2008; Gucciardi and Gordon, 2009) identified specific key psychological components that affect performance across many sports codes. These include: self-confidence, self-motivation, attention control, hardiness, enjoyment, ability to handle pressure, resilience and quality preparation. However, some dimensions are sport-specific, such as reaction time, team cohesion and team dynamics. In other words, the context of mental toughness may be determined by the nature of a specific sport (Crust, 2008; Connaughton and Hanton, 2009; Gucciardi and Gordon, 2009). Research suggests that mentally tough athletes may be better able to maintain an optimal mindset throughout competition (Cashmore, 2002), handle criticism, losses, and poor performances (Clough et al., 2002), overcome or rebound from setbacks (Jones et al., 2002), take personal responsibility for performance (Fourie and Potgieter, 2001), and remain calm and relaxed in high pressure situations (Clough et al., 2002). Additionally, the mental toughness components of confidence, anxiety management, and concentration have all been found to positively relate to athletic performance (Durand-Bush, Salmela, & Green-Demers, 2001; Meyers, Le Unes, and Bourgeois, 1996; Smith & Christensen, 1995; Smith, Schutz, Smoll, and Ptacek, 1995). The literature clearly shows that mental

toughness is imperative for peak sport performance. Gould, Hodge, Peterson, and Petlichkoff (1987), Gould, Eklund, and Jackson (1993a), Williams (1998), and Gould, Dieffenbach, and Moffett (2002), all state that mental toughness is an important psychological characteristic of sport performance.

2. Methodology

2.1 Method

For the present study, descriptive comparative method was used. It was used to assess the mental toughness of Individual Game and Team Game players and to compare between the two groups.

2.2 Sampling Technique

For the present study, the researcher used Quota sampling technique to select the sample from the population because the entire population for the study was not known. The Quota sampling was used so as to ensure that both contact game and non-contact game players are included in the study.

2.3 Population

All the players that have represented their state and who fall in the age group of 19 to 22 years. Also the players were expected to have at least 3 years playing experience.

2.4 Sample

From the population 120 subjects were chosen for the present study. Individual Game 60 players and Team Game 60 players. The subjects were selected as given in the table below.

Table 1: Distribution of Sample

Individual Game				Team Game			
Contact Game		Non-Contact Game		Contact Game		Non-Contact Game	
Boxing	Wrestling	Badminton	Shooting	Football	Hockey	Cricket	Volleyball
15	15	15	15	15	15	15	15

2.5 Tools used for data collection

The mental toughness questionnaire (Dr. Allan Goldberg, 2004) was used to evaluate the mental toughness of the subjects. This questionnaire is a Free Online Resource by Dr. Goldberg. It is a sport specific questionnaire to evaluate overall mental toughness. It consists of thirty questions. The questionnaire encompasses five subscales namely reboundability, pressure handling, confidence, concentration and motivation each consisting of six questions. The subjects had to respond by either saying True or False. Each correct answer gives one point and a wrong answer gives zero point. The score for this questionnaire ranges from zero to thirty. A score of 6 in any one of the five subscales indicates a special strength in that area. A 5 indicates solid skill and 4 or less

highlights that particular area as a mental weakness that needs to be addressed. A score of 26-30 indicates strength in overall mental toughness. Scores of 23-25 indicates average to moderate skill in mental toughness. Scores of 22 or below mean that you need to start putting more time into the mental training area.

2.6 Procedure

To enhance the cooperation of the subjects the researcher personally met the subjects, explained the purpose of investigation and gave a clear instruction regarding the method for answering the questions. The researcher distributed the questionnaire booklet for marking the responses. The researcher in person in a face to face relationship administered the entire questionnaire. The subjects went through the instructions, read each statement carefully and indicated their responses. All the filled in questionnaires were collected from the subjects and scoring was done according to the scoring key. Usually an individual took 5 to 10 minutes in completing the test.

2.7 Statistical tools

To evaluate the score of mental toughness descriptive statistics were used. The “independent sample t test” was applied to find out the significant differences between Individual Game and Team Game players. To test the hypotheses, the level of significance was set at 0.05.

3. Results

Table 2: Descriptive statistic of Reboundability between
Individual Game and Team Game Players

	Game Type	N	Mean	Std. Deviation	Std. Error Mean
Reboundability	Individual	60	3.00	1.008	.130
	Team	60	4.05	1.111	.143

Table 2 shows the descriptive statistics of Reboundability of Individual Game and Team Game Players. Team Game players have higher level of Reboundability than Individual Game players.

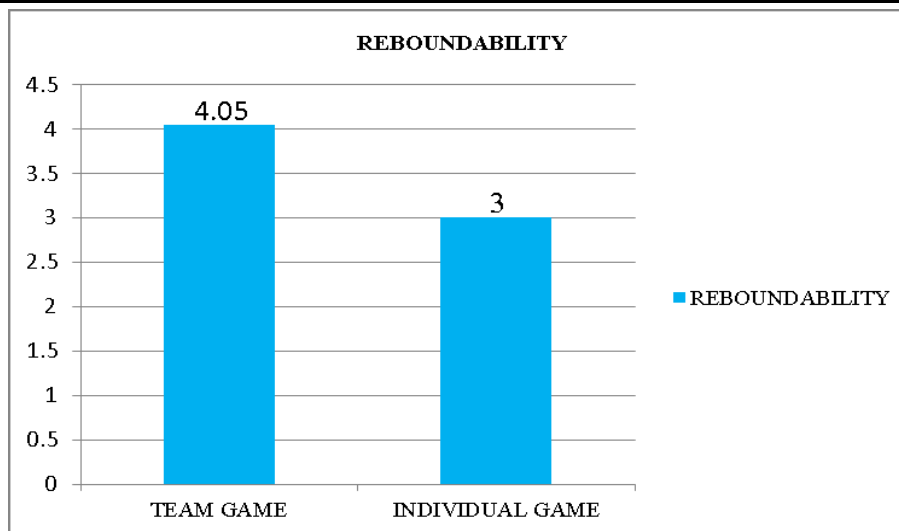


Figure 1: Graph of Mean of Reboundability between Individual Game and Team Game Players

The above graph shows the Mean of Reboundability of Individual Game and Team Game players. It can be seen that the mean score of Team Game players is 4.05 which is higher than Individual Game players who have a mean score of 3.

Table 3: Descriptive statistic of Pressure Handling between Individual Game and Team Game Players

	Game Type	N	Mean	Std. Deviation	Std. Error Mean
Pressure Handling	Individual	60	4.18	.965	.125
	Team	60	4.28	1.027	.133

Table 3 shows the descriptive statistics of Pressure Handling of Individual Game and Team Game Players. Team Game players possess higher level of Pressure Handling ability than Individual Game players.

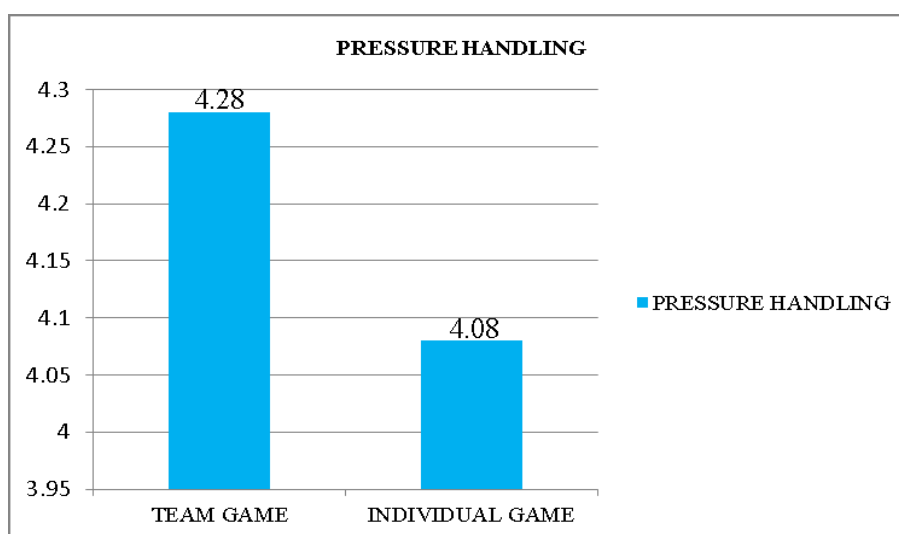


Figure 2: Graph of Mean of Pressure Handling between Individual Game and Team Game Players

The above graph shows the Mean of Pressure Handling of Individual Game and Team Game players. It can be seen that the mean score of Team Game players is 4.28 which is higher than Individual Game players who have a mean score of 4.08.

Table 4: Descriptive statistic of Concentration between
Individual Game and Team Game Players

	Game Type	N	Mean	Std. Deviation	Std. Error Mean
Concentration	Individual	60	4.33	1.003	.129
	Team	60	4.12	1.075	.139

Table 4 shows the descriptive statistics of Pressure Handling of Individual Game and Team Game Players. Individual Game players show higher level of Concentration than Team Game players.

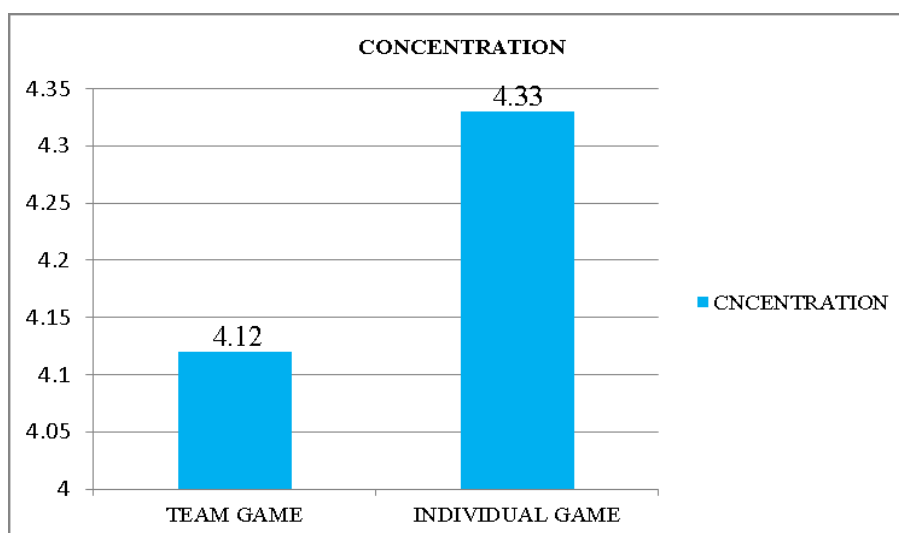


Figure 3: Graph of Mean of Concentration between
Individual Game and Team Game Players

The above graph shows the Mean of Concentration of Individual Game and Team Game players. It can be seen that the mean score of Team Game players is 4.12 which is lower than Individual Game players who have a mean score of 4.33.

Table 5: Descriptive statistic of Confidence between
Individual Game and Team Game Players

	Game Type	N	Mean	Std. Deviation	Std. Error Mean
Confidence	Individual	60	4.48	.930	.120
	Team	60	4.48	1.017	.131

Table 5 shows the descriptive statistics of Pressure Handling of Individual Game and Team Game Players. Individual Game players and Team Game players show the same amount of confidence.

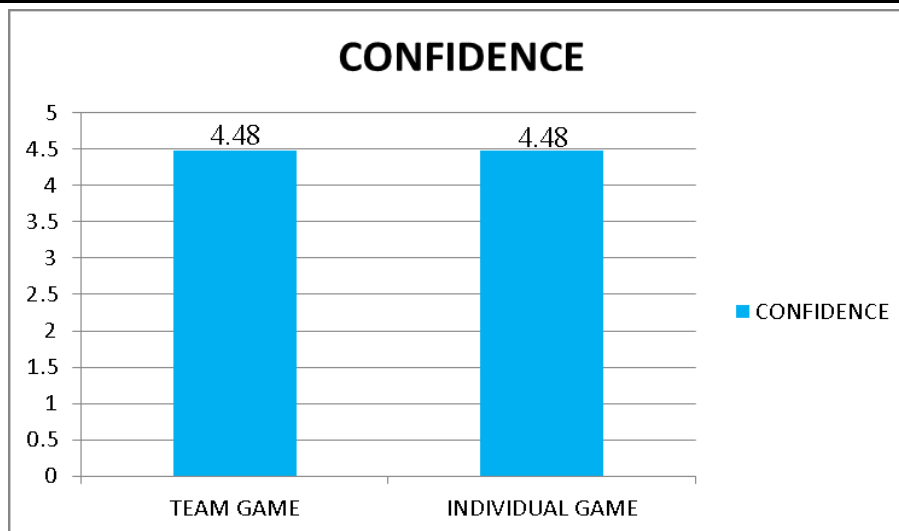


Figure 4: Graph of Mean of Confidence between Individual Game and Team Game Players

The above graph shows the Mean of Confidence of Individual Game and Team Game players. It can be seen that the mean score of Team Game players is 4.48 which is same as Individual Game players who have a mean score of 4.48.

Table 6: Descriptive statistic of Motivation between Individual Game and Team Game Players

	Game Type	N	Mean	Std. Deviation	Std. Error Mean
Motivation	Individual	60	4.57	.963	.124
	Team	60	4.98	.813	.105

Table 6 shows the descriptive statistics of Pressure Handling of Individual Game and Team Game Players. Team Game players possess higher level of Motivation than Individual Game players.

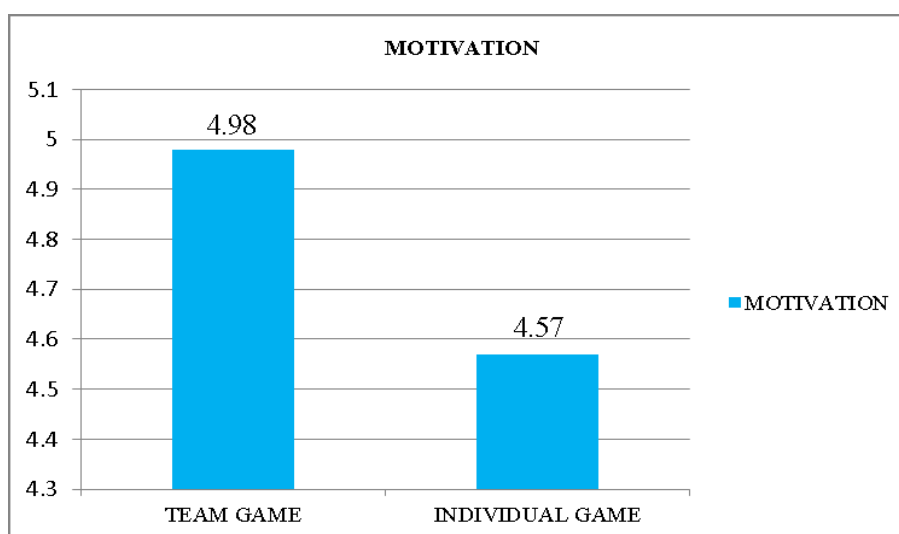


Figure 5: Graph of Mean of Motivation between Individual Game and Team Game Players

The above graph shows the Mean of Motivation of Individual Game and Team Game players. It can be seen that the mean score of Team Game players is 4.98 which is higher than Individual Game players who have a mean score of 4.57.

Table 7: Descriptive statistic of Mental Toughness between
Individual Game and Team Game Players

	Game Type	N	Mean	Std. Deviation	Std. Error Mean
Mental toughness	Individual	60	20.57	1.798	.232
	Team	60	21.92	2.102	.271

Table 7 shows the descriptive statistics of Overall Mental Toughness of Individual Game and Team Game Players. Team Game players possess higher level of Mental Toughness than Individual Game players.

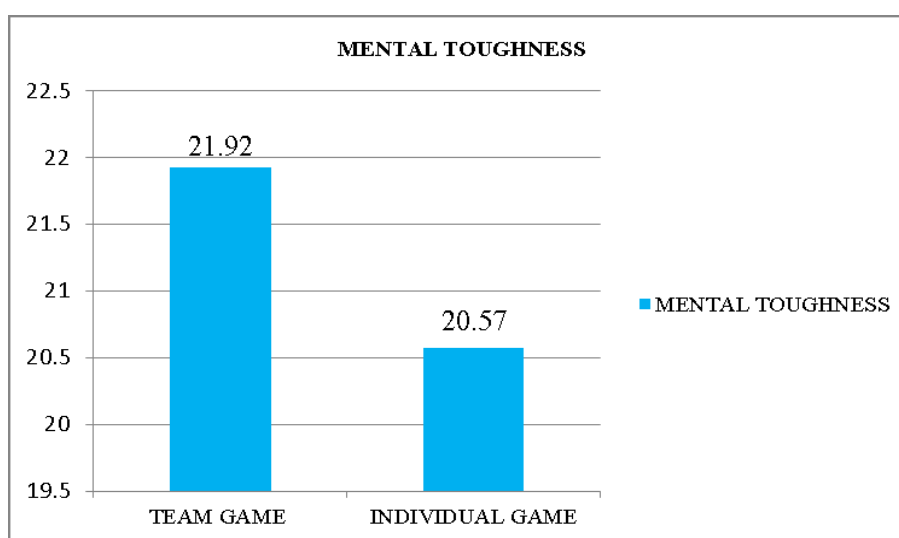


Figure 6: Graph of Mean of Mental Toughness between
Individual Game and Team Game Players

The above graph shows the Mean of Mental Toughness of Individual Game and Team Game players. It can be seen that the mean score of Team Game players is 21.92 which is higher than Individual Game players who have a mean score of 20.57.

3.1 Testing of Hypothesis

Table 8: Comparison of Reboundability between
Individual Game and Team Game Players

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Reboundability	Equal variances assumed	.636	.427	-5.420	118	.001	-1.050	.194
	Equal variances not assumed			-5.420	116.906	.001	-1.050	.194

Table 8 shows the statistical analysis for Reboundability using independent sample t test. Since the significant value is greater than 0.05 equal variance is assumed. The calculated t value (-5.420) for df 118 shows that there is a significant difference in Reboundability between Individual Game and Team Game players at 0.05 significance level ($p=.001$). Hence the null hypothesis is rejected the research hypothesis is accepted.

Table 9: Comparison of Pressure Handling between
Individual Game and Team Game Players

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Pressure Handling	Equal variances assumed	.321	.572	-.550	118	.584	-.100	.182
	Equal variances not assumed			-.550	117.556	.584	-.100	.182

Table 9 shows the statistical analysis for Pressure Handling using independent sample t test. Since the significant value is greater than 0.05 equal variance is assumed. The calculated t value (-.550) for df 118 shows that there is no significant difference in Pressure handling ability between Individual Game and Team Game players at 0.05 significance level ($p=.584$). Hence the null hypothesis failed to be rejected and research hypothesis is rejected.

Table 10: Comparison of Concentration between
Individual Game and Team Game Players

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Concentration	Equal variances assumed	.000	.996	1.142	118	.256	.217	.190
	Equal variances not assumed			1.142	117.434	.256	.217	.190

Table 10 shows the statistical analysis for Concentration using independent sample t test. Since the significant value is greater than 0.05 equal variance is assumed. The calculated t value (1.142) for df 118 shows that there is no significant difference in Concentration between Individual Game and Team Game players at 0.05 significance level ($p=.256$). Hence, the null hypothesis failed to be rejected and research hypothesis is rejected.

Table 11: Comparison of Confidence between
Individual Game and Team Game Players

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Confidence	Equal variances assumed	.830	.364	.000	118	1.000	.000	.178
	Equal variances not assumed			.000	117.066	1.000	.000	.178

Table 11 shows the statistical analysis for Confidence using independent sample t test. Since the significant value is greater than 0.05 equal variance is assumed. The calculated t value (0.000) for df 118 shows that there is no significant difference in Confidence between Individual Game and Team Game players at 0.05 significance level ($p=1.000$). Hence, the null hypothesis failed to be rejected and research hypothesis is rejected.

Table 12: Comparison of Motivation between
Individual Game and Team Game Players

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Motivation	Equal variances assumed	6.269	.014	-2.561	118	.012	-.417	.163
	Equal variances not assumed			-2.561	114.759	.012	-.417	.163

Table 12 shows the statistical analysis for Motivation using independent sample t test. Since the significant value is greater than 0.05 equal variance is assumed. The calculated t value (-2.561) for df 118 shows that there is a significant difference in Motivation between Individual Game and Team Game players at 0.05 significance level ($p=0.012$). Hence, the null hypothesis rejected and research hypothesis is accepted.

Table 13: Comparison of Mental Toughness between
Individual Game and Team Game Players

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Mental Toughness	Equal variances assumed	2.473	.119	-3.781	118	.001	-1.350	.357
	Equal variances not assumed			-3.781	115.2 40	.001	-1.350	.357

Table 13 shows the statistical analysis for Mental Toughness using independent sample t test. Since the significant value is greater than 0.05 equal variance is assumed. The calculated t value (-3.781) for df 118 shows that there is a significant difference in Motivation between Individual Game and Team Game players at 0.05 significance level ($p=0.001$). Hence, the null hypothesis rejected and research hypothesis is accepted.

4. Discussion

From the findings, it was observed that the Team Game players possessed better ability in Reboundability, Pressure Handling, Motivation and Overall Mental Toughness. Whereas Individual Game players possessed better Concentration ability. But for Confidence both sets of Groups showed similar ability. Although there was a difference between the groups, the research hypothesis can be accepted only for Reboundability, Motivation and Overall Mental Toughness. Hence, we can say that there is a significant difference between Individual Game and Team Game players in terms of these three

attributes. Whereas there is no significant difference between Individual Game and Team Game players when it comes to Pressure Handling, Concentration and Confidence.

5. Conclusion

From the findings of the study, we can conclude that there is a significant difference in Mental Toughness between Individual Game and Team Game players wherein Team Game players possess a higher level of Mental Toughness. Also, there is a significant difference between Individual Game and Team Game players in terms of two attributes of mental toughness which are Reboundability and motivation with Team Game players attaining higher scores in both. The literature says that in Team Games athletes are involved with teammates and spend a lot of time practicing with teammates and have more interaction with one another hence the better Reboundability, Motivation and Pressure Handling ability can be attributed to this particular fact wherein the teammates motivate each other and also help them to come out of setbacks. From literature, it can also be observed that in individual sports, the outcome is either winning or losing and there isn't tie, but in team sports, all three results are possible hence, there is less pressure on the Team Game players so we can conclude that the better pressure handling ability of Team Game players is due to this fact. Some of individual sports athlete have more time for mental skills practice and they do so in a quiet environment while distraction and loss of concentration are part of the team sports, therefore we can conclude that higher concentration of Individual Game players because of this particular reason. Finally, we can conclude by saying that as the Team Game players scored high in most of the attributes of Mental Toughness and the Team Game settings influence better Mental Toughness of individuals hence in this study we can see that the Mental Toughness of Team Game players is higher. Also as (Bull et. al., 2005) observed on the basis of research that there is also the potential for difference in mental toughness from one sports and event to the other we can see that in this research the researcher has found a significant difference in Mental Toughness between Individual Game and Team Game players.

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